IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

NOKIA TECHNOLOGIES OY,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 23-1236 (GBW)
	)	
AMAZON.COM, INC.,	)	**DEMAND FOR JURY TRIAL**
AMAZON.COM SERVICES, LLC and	)	
TWITCH INTERACTIVE, INC.,	)	
	)	
Defendants.	)	

REPLY BRIEF IN SUPPORT OF MOTION FOR PARTIAL DISMISSAL PURSUANT TO FED. R. CIV. P. 12(b)(6)

MORRIS, NICHOLS, ARSHT & TUNNELL LLP
Jack B. Blumenfeld (#1014)
Jeremy A. Tigan (#5239)
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
(302) 658-9200
jblumenfeld@morrisnichols.com
jtigan@morrisnichols.com

OF COUNSEL:

J. David Hadden
Saina S. Shamilov
Ravi R. Ranganath
Allen Wang
Vigen Salmastlian
FENWICK & WEST LLP
801 California Street
Mountain View, CA 94041
(650) 988-8500

Attorneys for Defendants Amazon.com, Inc., Amazon.com Services, LLC and Twitch Interactive, Inc.

Todd R. Gregorian
Ethan M. Thomas
FENWICK & WEST LLP
555 California Street
San Francisco, CA 94104
(415) 875-2300

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STATUTES

I.   THE PIXEL AVERAGE PATENTS ('469, '599, AND '273 PATENTS) ARE PATENT-INELIGIBLE.

The Pixel Average Patents are directed to the impermissibly abstract idea of encoding and decoding using basic math to interpolate subpixels. (*See* D.I. 18 ("Op. Br.") at 11-14.) Nokia disagrees, but its own characterization of the patents—as directed to an "algorithm" for interpolating other sub-pixel values—is no different. (D.I. 22 ("Opp.") at 9.)

Nokia argues this idea is not abstract, but an "algorithm" in the context of interpolating values is just another word for "math formula." Courts typically find claims directed to mathematical formulas abstract. (*See* Op. Br. at 12-13 (citing cases)); *Digitech Image Techs v. Elecs. for Imaging*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (claim to "a method of calculating, using a mathematical formula, even if the solution is for a specific purpose" is ineligible) (citation omitted). Nokia does not directly address these cases, arguing instead that not *all* claims "relating in some way to video encoding or decoding [are] abstract." (Opp. at 7.) While some patents related to encoding/decoding may claim eligible subject matter, the claims *here* do not because they recite only basic arithmetic. Such claims are abstract as a matter of law. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("Adding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract.").

Nokia argues that the claims are not abstract because they cover a "specific improvement" in video encoding. This argument fails because Nokia describes the alleged "improvement" as an "improvement to sub-pixel *interpolation*." (Opp. at 7 (emphasis added).) The specification describes the claimed interpolation as a mathematical process—a means of "estimat[ing]," or calculating, a sub-pixel value. ('469 Patent, 6:65-7:3.) Thus, even Nokia admits that the alleged "improvement" is nothing more than the application of basic math. Such mathematical formulas are abstract and ineligible. *Recognicorp, LLC*, 855 F.3d at 1326.

Nokia next contends that the purported improvement in "interpolation" results in a "computationally more efficient" process, that requires "less memory," and has "substantial benefits to motion prediction, video compression, video quality, and video playback." (Opp. at 6-7.) This contention lacks merit. First, Nokia does not tie these alleged benefits to the actual claim language.[1] *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 769 (Fed. Cir. 2019) ("The § 101 inquiry must focus on the language of the Asserted Claims themselves, and the specification cannot be used to import details from the specification if those details are not claimed." (internal citations omitted)); *Am. Axle & Mfg., Inc. v. Neapco Holdings LLC*, 967 F.3d 1285, 1293 (Fed. Cir. 2020) ("features that are not claimed are irrelevant as to step 1 or step 2.").

Second, the "benefits" Nokia points to come not from any improvement in a computer but simply from implementing the abstract idea of interpolation on a computer, which does not make an otherwise abstract idea eligible for patent protection. *Realtime Data LLC v. Array Networks Inc.*, 537 F. Supp. 3d 591, 616 (D. Del. 2021) (finding claims ineligible because "[t]o the extent that the patents teach anything, it is simply the benefits of data compression."); *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1364 (Fed. Cir. 2020) ("'claiming the improved speed or efficiency inherent with applying the abstract idea on a computer' was insufficient to render the claims patent eligible.") (quoting *Intell. Ventures I LLC v. Cap. One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015)); *see also Voit Techs., LLC v. Del-Ton, Inc.*, 757 F. App'x 1000, 1003-04 (Fed. Cir. 2019) ("'improved speed or efficiency inherent with applying the abstract idea on a computer' are insufficient to demonstrate an inventive concept."). Indeed, under Nokia's view,

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[1] Nokia makes much of the specification's discussion of "TML5" and "TML6" interpolation schemes. (*See* Opp. at 7-8.) Not only do the *claims* not reference any purported advantage over these existing interpolation methods, but the specification describes the alleged improvement of as using "lower precision arithmetic." ('469 patent at 38:1-5.) Thus, the specification makes clear that the claims are directed to mere simple arithmetic, which is an abstract idea.

no claim involving application of a mathematical formula would be impermissibly abstract, as the purpose of doing so is always to perform calculations more efficiently and effectively.

Nokia attempts to analogize its claims to those upheld in *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1153 (Fed. Cir. 2019), but that case is inapplicable. (Opp. at 8.) The challenged patent in *Koninklijke* related to the concept of "error checking in data transmissions." *Id.* at 1150. While existing error checking methods compared "check data" on either side of the transmission to ensure accuracy, even in the case of a corrupted data transmission "certain generating functions [could] coincidentally produce the same check data for a corrupted data block and an uncorrupted data block." *Id.* at 1145. The claims improved these methods by "applying a different *permutation* to different data blocks," and specifying "how the permutation is modified" and stored. *Id.* at 1148 (emphasis added). The Federal Circuit held the claims directed to the idea of "process[ing] data (by reordering information via permutation)," and not abstract because they "specifically recite[d] how this permutation is used (i.e., modifying the permutation applied to different data blocks)." *Id.* at 1153 (emphasis added). The claims "capture[d] the specific asserted improvement in detecting systematic errors" described in the patent. *Id.* at 1153. In contrast, the claims of the Pixel Average patents do not capture the benefits Nokia attributes to the claims; they claim only a simple mathematical formula for interpolation.

The claims of the Pixel Average patents are also non-inventive at *Alice* step 2. Nokia does not dispute that the claims use only conventional technology. (*See* Opp. at 8-9.) Instead, it rehashes its step 1 arguments, arguing that the claims are inventive because they result in a "specific improvement" in video processing. This fails for the same reasons discussed above: they are not tied to the claims and the alleged benefits are improvements not to a computer but merely the result of implementing the abstract idea—a math equation—using computers.

Nokia alternatively contends that the claims recite an inventive ordered combination because "each step of the claims at issue describes the specific association between a sub-pixel and neighboring pixel or subpixel (sic) values." (Opp. at 9). This contention lacks merit because the ordering of the claimed steps flows logically from the abstract idea itself—*i.e.*, it simply describes the steps of a mathematical formula for interpolation. *See Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341, 1348–49 (Fed. Cir. 2019) (no inventive concept where the steps "as an ordered combination add nothing to the [abstract idea] that is not already present when the steps are considered separately."). Simply calculating sub-pixel values before other sub-pixel values in a logical manner is not inventive.[2]

II.   THE PARAMETER SET PATENT ('818 PATENT) IS PATENT-INELIGIBLE.

The Parameter Set patent is directed to the abstract idea of "encoding and decoding video data by classifying data in pictures," specifically by "classif[ying] parameter values based on whether they are the same across slices of a picture . . . or across pictures of a sequence." (Op. Br., 8-10, 17-18.) Nokia's characterization of the patent—"separation of sequence parameter sets [and] picture parameter sets," and the "inclusion of specific parameters in slice headers"—is not meaningfully different. (*See* Opp. at 10.)

Nokia still argues that the claims of the Parameter Set patent are not abstract because they purportedly claim a "technical improvement" in video encoding and decoding—according to Nokia, using "sequence parameter sets," "picture parameter sets," and "slide headers," rather than a "single parameter set," resulting in increased efficiency. (Opp. at 10.) This argument fails because using multiple sets of parameters is merely the abstract idea itself. It is not a technological solution or improvement to computers. *See Int'l Bus. Machines Corp. v. Zillow Grp., Inc.*, 50

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[2] Nokia does not dispute representativeness for the Pixel Average patents. (Opp. at 6-9.)

F.4th 1371, 1377–78 (Fed. Cir. 2022) (the claims must "recite [] assertedly inventive technology for improving computers as tools," and not "an abstract idea for which computers are invoked merely as a tool.") (citations omitted); *ChargePoint*, 920 F.3d at 768 (the computer must "itself [be] improved from a technical perspective" or "operate differently than it otherwise could.").

Nokia argues that the claims cover "'a novel data structure" that "result[s] in increased efficiency and compression." (Opp. at 10-14.) But this is incorrect: the *claims* do not recite a new or improved data structure. *ChargePoint*, 920 F.3d at 769 ("§ 101 inquiry must focus on the language of the Asserted Claims"). Instead, the claims merely recite "defining . . . parameter values" in sequence parameter and picture parameter sets, and including one value "in a slice header"—*i.e.*, the use of multiple parameter sets. Indeed, Nokia does not dispute that each of "parameter values," "parameter sets," and "slice headers" were routine and conventional as of the date of the patents. (*See* Op. Br. at 8; *see also* '818 at 2:6-12, 2:48-59; *see generally*, Opp.) Thus, unlike the claims in *Enfish LLC v. Microsoft Corp.,* 822 F.3d 1327, 1337 (Fed. Cir. 2016), the existing parameters of the Parameter Set Patent do not represent a new data structure, let alone one that renders the claims non-abstract.

To the extent the claims result in any improved efficiency, this comes only from implementing the claimed idea on a computer. Such "improvements" do not amount to an improvement in computers that renders the claims non-abstract. *See Realtime Data*, 537 F. Supp. 3d at 608 (claims directed to "compressing data based on the content of that data" are abstract.); *Zillow Grp.*, 50 F.4th at 1382 (claims ineligible where "improved efficiency comes not from an improvement in the computer but from applying the claimed abstract idea to a computer display.").

The purported "specific improvement" Nokia identifies also does not save the claims because the cited benefits are results, rather than any technical solution for achieving them. *See*

Elec. Power Grp., LLC v. Alstom S.A., 830 F.3d 1350, 1355 (Fed. Cir. 2016) (invalidating claims lacking "any requirements for *how* the desired result is achieved"). The claims of the Parameter Set patent recite vague, functional steps, such as "*defining* . . . parameter values" in a sequence parameter set and picture parameter set, and "*defining* . . . at least one picture parameter value." ('818 patent, cl. 1.) The claims do not explain *how* the purported invention "defin[es]" any of such parameter values, let alone how this brings about the benefits identified by Nokia.   The functionally-claimed steps are directed to the abstract idea of defining classifying data. [3]

Nokia attempts to analogize its claims to those in *Packet Intel. LLC v. NetScout Sys.*, 965 F.3d 1299, 1308 (Fed. Cir. 2020), but the challenged claims in that case are nothing like those here. (*See* Opp. at 12-13). The patent in that case related to network monitoring—identifying the "amount or type of information being transmitted by a particular application or protocol," and identifying "disjointed connection flows as belonging to the same conversational flow." *Packet Intel. LLC*, 965 F.3d at 1307.   The claims described a detailed method of parsing packets, extracting information, creating a unique flow signature, and comparing against a flow-entry database. *Id.* The Federal Circuit upheld the claims because they disclosed "a granular, nuanced, and useful classification of network traffic" that "improved quality and performance of traffic flows" and allowed network monitors to "identify intrusions and malicious attacks." *Id.* at 1308-1309. This amounted to "a technological solution to a technological problem." *Id.* at 1309. The claims of the Parameter Set patent are completely different. They do not identify a "granular, nuanced, and useful classification," and recite no specific technological solution; they claim only

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[3] Nokia accuses Amazon of "dramatic oversimplification" in arguing that the claims relate to classifying image data. (Opp. at 11.) It claims that the analogy does not address "encoding and decoding for *bit savings*." (*Id.* (emphasis added).) But the claims do not recite "bit savings." The claims relate to classifying images using parameters, a practice that could be carried out with printed photos or a series of images in a video stream.

the idea of classifying image data by "defin[ing]" parameter values for "sequence parameter sets [and] picture parameter sets."

The claims of the Parameter Set patent also fail at *Alice* step 2. Again, Nokia does not dispute that the claims recite only conventional technology, and Nokia does not identify any novel or non-conventional computer components. (*See* Opp. at 13-15.) Nokia argues instead that the use of parameters (*i.e.*, the "sequence parameter sets, picture parameter sets, and inclusion of certain parameters in slice headers") is inventive. (Opp. at 13-14.) But the use of these parameters is simply the abstract idea itself, which cannot supply an inventive concept as a matter of law. *Wireless Discovery LLC v. eHarmony, Inc.*, 654 F. Supp. 3d 360, 375 (D. Del. 2023), *appeal docketed*, No. 23-1586 (Fed. Cir. Mar. 16, 2023) ("[t]he abstract idea itself cannot supply the inventive concept, no matter how groundbreaking the advance").

Nokia alternatively contends that its complaint allegations create a fact issue precluding resolution of patent eligibility on the pleadings. (Opp. at 14.) But as Federal Circuit Judge Bryson recently held, a patentee that claims a fact dispute must articulate "what the alleged inventive concept is," "how it is embodied in the claims," or how it is "described and enabled by the specification." *KOM Software Inc. v. NetApp, Inc.*, No. 18-160-WCB, 2023 WL 6460025, at *11 (D. Del. Oct. 4, 2023). Nokia's conclusory complaint allegations merely make the same attorney arguments that Nokia rehashes in its opposition. (Compl. ¶¶ 63-70.) While Nokia claims that the claimed invention provides a "specific technological improvement" (*id.*), the purported improvements are not tied to the claims and are not improvements to computer functionality.

Finally, Nokia argues that claim 1, which it asserts in the complaint in this case, is not representative of the other claims of the '818 patent for purposes of patent ineligibility. (Opp. at 15.) It argues claim 1, which recites a method for *encoding*, is distinct from claim 6, which recites

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a method for *decoding*. (*Id.*) This argument fails. In its opening brief, Amazon explained why the use of parameter sets for *both* encoding and decoding was non-inventive. (Op. Br. at 17-19.) And as set forth in Amazon's Opening Brief filed in the -1232 matter, claims 1 and 6 require nearly identical limitations: the definition or use of parameters—a "sequence parameter set" and "picture parameter set" and a "picture parameter value" that remains unchanged in all the slice headers of a picture. (*See* C.A. 1.23-cv-01232-GBW, D.I. 19 at 19.) Nokia does not explain why the "decoder" of claim 6 affects the eligibility analysis. *Wireless Discovery LLC*, 654 F. Supp.3d at 371 (treating claim as representative where patentee failed to identify "concrete and technical elements" that would require "a separate patentability analysis"). Nokia also argues that dependent claim 8 is distinct for purposes of eligibility because it "requires the picture parameter set to include a reference to a sequence parameter set." (Opp. at 15.) But the use of a "sequence parameter" as one parameter does not change the abstract character of the claims. And the claim neither recites, nor explains, any "specific implementations as to how multiple nested parameters sets would reference one another." (Opp. at 15.) The Court can and should consider claim 1 of the '818 patent representative and should hold all claims of the patent invalid under § 101.

III. THE SEQUENCE INDICATOR PATENTS ('005 AND '764 PATENTS) ARE PATENT-INELIGIBLE.

The claims of the Sequence Indicator patents ('005 and '764 patents) are directed to the abstract idea of encoding and decoding video data using indexing or numbering. (Op. Br. at 14-15.) Nokia's formulation of the idea is no different, yet it tries to use technology-specific jargon to hide that its claims amount to little more than counting. It characterizes the claims as directed to "tracking reference pictures" by requiring "numbering" based on the "reference pictures' encoding order." (Opp. at 16-17.) Such claims are ineligible under Federal Circuit law. *See Elec. Power Grp.*, 830 F.3d at 1353 (claims to "collecting information, analyzing it, and displaying

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certain results" are ineligible); *Univ. of Fla. Rsch. Found., Inc. v. Gen. Elec. Co.,* 916 F.3d 1363, 1367-68 (Fed. Cir. 2019) (claims to collecting, manipulating, and displaying data are ineligible).

Nokia, however, contends that the claims are not abstract because they disclose a "specific way of detecting the loss of *reference* pictures in a video coding." (Opp. at 17 (emphasis in original).) This contention lacks merit. The claims do not recite any technological solution. They claim only the idea of assigning numbers to pictures. For example, claim 1 of the '005 patent requires "a sequence indicator having an independent numbering scheme, such that consecutive pictures used to form reference pictures in encoding order are assigned sequence indicator values that differ with respect to each other by a predetermined amount." ('005 patent, cl. 1.) A "numbering scheme" is not a specific way of detecting the loss of reference pictures.

Nokia argues next that the claims are non-abstract because they purportedly "achieve[] increased efficiency and video quality over conventional technology." (Opp. at 16, 18.) But the claims have nothing to do with video quality, and none of the purported benefits Nokia identifies are tied to the claims. *ChargePoint*, 920 F.3d at 769. The claims do not recite any new or specific hardware or software or improve the functioning of a computer. Such claims are abstract at *Alice* step 1. *See, e.g.*, *ChargePoint*, 920 F.3d at 768 (to be eligible, the computer must "itself [be] improved from a technical perspective" or "operate differently than it otherwise could").

The claims of the Sequence Indicator patents also fail *Alice* step 2. Again, Nokia does not dispute that the claims are implemented with conventional computing technology. (*See* Opp. at 18-19.) Nokia argues that the claims are inventive because they recite "technical improvement." (Opp. at 18.) But, as discussed above, the claims do not disclose any technical improvement, or any technology at all. Nokia contends that the specification provides "implementation detail" for the claimed invention, pointing to the patents' discussion of a "new sequence indicator (e.g.,

RPON) codeword." (Opp. at 17.) But the "codeword" is simply a generic numbering system implemented using admittedly conventional technology. ('005 patent at 3:39-52, 9:44-11:9.)

Finally, contrary to Nokia's assertion, the Court can and should consider the claims of the Sequence Indicator patents together for purposes of § 101. (*See* Opp. at 20.) Nokia identifies nothing distinct in the various dependent claims it references that affect the eligibility analysis or supply an inventive concept. It argues that "claims 3-4 and 13 of the '005 patent and 7 of the '764 Patent include specific locations in the bitstream where the sequence indicator value would be located," and thus provide "implementation detail" for the claimed invention. (Opp. at 20.) But these claims merely recite trivial variations on the basic numbering scheme of the representative claim; none describes *how* to use sequence indicators to more efficiently encode or decode video. ('005 patent, cl. 3 (requiring that "sequence indicator is included in a picture header"), cl. 4 (requiring "encoding according to the [existing] H.263 video coding standard" and the use of a "sequence indicator" in a bit stream according to the standard), '764 patent, cl. 7 (putting "sequence indicator" in "a picture segment header" or "a macroblock header").) Nokia asserts that claims 11 and 12 of the '005 patent and claims 5 and 6 of the '764 patent "provide further refinement and potential benefits by allowing the sequence indicator to be associated with a whole picture or part of a picture." (Opp. at 20.) But these claims are purely functional, reciting only the result of "associating" a sequence indicator with a picture. ('005 patent, cl. 11 ("wherein the sequence indicator is associated with a whole picture"), cl. 12 ("wherein the sequence indicator is associated with part of a picture"), '764 patent, cl. 5 ("associating a sequence indicator value with the whole of a picture"), cl. 6 ("associating a sequence indicator value with part of a picture").) They neither add an inventive concept nor "require a separate eligibility analysis." *Wireless Discovery LLC*, 654 F. Supp.3d at 371.

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MORRIS, NICHOLS, ARSHT & TUNNELL LLP

/s/ Jeremy A. Tigan

_____

Jack B. Blumenfeld (#1014)
Jeremy A. Tigan (#5239)
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
(302) 658-9200
jblumenfeld@morrisnichols.com
jtigan@morrisnichols.com

OF COUNSEL:

J. David Hadden
Saina S. Shamilov
Ravi R. Ranganath
Allen Wang
Vigen Salmastlian
FENWICK & WEST LLP
801 California Street
Mountain View, CA 94041
(650) 988-8500

Todd R. Gregorian
Ethan M. Thomas
FENWICK & WEST LLP
555 California Street
San Francisco, CA 94104
(415) 875-2300

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Attorneys for Defendants Amazon.com, Inc.,
Amazon.com Services, LLC and
Twitch Interactive, Inc.

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CERTIFICATE OF SERVICE

I hereby certify that on April 22, 2024, I caused the foregoing to be electronically filed with the Clerk of the Court using CM/ECF, which will send notification of such filing to all registered participants.

I further certify that I caused copies of the foregoing document to be served on April 22, 2024, upon the following in the manner indicated:

Brian E. Farnan, Esquire   *VIA ELECTRONIC MAIL*
Michael J. Farnan, Esquire
FARNAN LLP
919 North Market Street, 12th Floor
Wilmington DE 19801
Attorneys for Plaintiffs

Warren H. Lipschitz, Esquire   *VIA ELECTRONIC MAIL*
Alexandra F. Easley, Esquire
MCKOOL SMITH, P.C.
300 Crescent Court, Suite 1200
Dallas, TX 75224
Attorneys for Plaintiffs

R. Mitch Verboncoeur, Esquire   *VIA ELECTRONIC MAIL*
Joshua Budwin, Esquire
MCKOOL SMITH, P.C.
303 Colorado Street, Suite 2100
Austin, TX 78701
Attorneys for Plaintiffs

Kevin Burgess, Esquire   *VIA ELECTRONIC MAIL*
MCKOOL SMITH, P.C.
104 East Houston Street, Suite 300
Marshall, TX 75670
Attorneys for Plaintiffs

Joshua J. Newcomer, Esquire   *VIA ELECTRONIC MAIL*
MCKOOL SMITH, P.C.
600 Travis Street, Suite 7000
Houston, TX 77002
Attorneys for Plaintiffs

Theodore Stevenson, III, Esquire   *VIA ELECTRONIC MAIL*
ALSTON & BIRD LLP
2200 Ross Avenue, Suite 2300
Dallas, TX 75201
Attorneys for Plaintiffs

John D. Haynes, Esquire   *VIA ELECTRONIC MAIL*
Nicholas T. Tsui, Esquire
Shawn P. Gannon, Esquire
ALSTON & BIRD LLP
1201 West Peachtree Street
Atlanta, GA 30309
Attorneys for Plaintiffs

Stephen R. Lareau, Esquire   *VIA ELECTRONIC MAIL*
ALSTON & BIRD LLP
1120 South Tryon Street, Suite 300
Charlotte, NC 28203-6818
Attorneys for Plaintiffs

                                          /s/ Jeremy A. Tigan

                                          _____
                                          Jeremy A. Tigan (#5239)

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